

# SEQUENCE LISTING

<110> Vernet et al.

<120> Novel Polypeptides and Nucleic Acids Encoding Same

<130> 15966-672 Utility

<140> 09/783,436

<141> 2001-02-14

<150> 60/182,637

<151> 2000-02-15

<150> 60/237,862

<151> 2000-10-04

<150> 60/240,316

<151> 2000-10-13

<150> 09/783,436

<151> 2001-02-14

<160> 75

<170> PatentIn Ver. 2.1

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<212> DNA

<213> Homo sapiens

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cccgtgaccc atgctgtgga cttcatgttc taggaggtag agggagacag acaagaatca 480
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20 25 30
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Ser Ser Gly His Gly Ile Arg Pro Leu His Ser Ser Arg Ser Phe Asn  
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Pro Ile Ser Thr His Thr Ser Leu Cys Ala Leu Thr Pro Pro Gln Pro  
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Phe Trp Asn Lys Thr Ile Thr Ala Gln Gly Leu Gln Asp Val  
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 ctataaaaca agaaaacctc tacgtacaga tcttttaaaa ttaaagcagg catctttgct 180  
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Ile Phe Ala Tyr Thr Arg Asp Ile Gln Gly Lys Arg Pro Lys Ser Lys  
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His Glu Ile His Leu Cys Phe Ile Tyr Thr Ser Tyr Ile Tyr Ser Leu  
 35 40 45

Lys Val Ile Leu Tyr Ser Ile Tyr Asn Leu Ser Lys Glu Gln Ser Phe  
 50 55 60

Asp Cys Val Leu Thr Met Thr Arg His Val Lys Ser Tyr Val Glu Phe  
 65 70 75 80

Ser Thr Cys Gly Ile Thr Gln Ala Leu Lys Lys Leu Gln Ile Trp Glu  
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Val Tyr Gln  
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<210> 5  
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<220>  
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 <222> (408)  
 <223> Where n is an A, T, G, or C

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 cgccactgca ctccagcctg ggcgacagag cgagactccg tctcaaaaaa aaaaaaaaag 180  
 aacatcctga gccgggctg gaaaagctct ttgcagatgg cgcttccatc tctgcgcccc 240  
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2351

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<213> Homo sapiens

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20 25 30

Asn Ile Leu Glu Thr Leu Phe His Thr Trp Met Val Pro Ala Ile Asp  
35 40 45

Pro Val Ser Phe Tyr His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp  
50 55 60

Ile Pro Asn Lys His Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val  
65 70 75 80

Leu Pro Asn Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp  
85 90 95

Thr Asp Val Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe  
100 105 110

Ala His Phe Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser  
115 120 125

Asp Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro Ala  
130 135 140

Leu Gly Arg Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg  
145 150 155 160

Leu Arg Gln Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg  
165 170 175

Glu Leu Leu Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe  
180 185 190

Asn Ala Val Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys  
195 200 205

Val Trp Asn Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr  
210 215 220

Ser Glu Ala Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys  
225 230 235 240

Leu Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu  
245 250 255

Thr Phe Leu Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val  
 260 265 270  
 Cys Pro Ser Gln Pro Pro Pro Gly Ala Glu Gln Leu Gln Gln Ala Leu  
 275 280 285  
 Ala Gln Leu Asp Glu Glu Asp Pro Cys Phe Glu Phe Arg Gln Gln Gln  
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 305 310 315 320  
 Pro Pro Arg Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp  
 325 330 335  
 Arg Leu Gln Met Leu Glu Ala Leu Cys Arg His Trp Pro Gly Pro Met  
 340 345 350  
 Ser Leu Ala Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His  
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 Phe Val Glu Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr  
 370 375 380  
 His Val Val Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg  
 385 390 395 400  
 Asn Val Ala Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp  
 405 410 415  
 Ile Asp Phe Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser  
 420 425 430  
 Ile Glu Gln Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val  
 435 440 445  
 Pro Ala Phe Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys  
 450 455 460  
 Val Glu Leu Leu Ala Leu Leu Asp Ala Gly Thr Leu Tyr Thr Phe Arg  
 465 470 475 480  
 Tyr His Glu Trp Pro Arg Gly His Ala Pro Thr Asp Tyr Ala Arg Trp  
 485 490 495  
 Arg Glu Ala Gln Ala Pro Tyr Arg Val Gln Trp Ala Ala Asn Tyr Glu  
 500 505 510  
 Pro Tyr Val Val Val Pro Arg Asp Cys Pro Arg Tyr Asp Pro Arg Phe  
 515 520 525  
 Val Gly Phe Gly Trp Asn Lys Val Ala His Ile Val Glu Leu Asp Ala  
 530 535 540  
 Gln Glu Tyr Glu Leu Leu Val Leu Pro Glu Ala Phe Thr Ile His Leu  
 545 550 555 560

a1

Pro His Ala Pro Ser Leu Asp Ile Ser Arg Phe Arg Ser Ser Pro Thr  
565 570 575

Tyr Arg Asp Cys Leu Gln Ala Leu Lys Asp Glu Phe His Gln Asp Leu  
580 585 590

Ser Arg His His Gly Ala Ala Ala Leu Lys Tyr Leu Pro Ala Leu Gln  
595 600 605

Gln Pro Gln Ser Pro Ala Arg Gly  
610 615

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<212> DNA  
<213> Homo sapiens

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gcggaggctg tagtgagcca agattgtgcc actgcactcc agcctgggca acaaagttag 180  
actcttatct tacaagaaaa aaaagaatgc ttaggaatca actcccctcc taatgcccgag 240  
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20 25 30

Ala Ala Gly Val Leu Arg Ala Gly Gly Thr Val Ile Asn Gly Ile Pro  
35 40 45

Arg Val Thr Ala Gly Leu Val Thr Ser Gln Leu Glu Glu Arg Pro Val  
50 55 60

Ile Leu Ile Glu Val Glu Leu Leu Phe Leu Ala Ala His Glu Glu Val  
65 70 75 80

Leu Thr Phe Gly Tyr Lys Ala Gly Gln Gly Leu Gly Val Glu Ser Pro

85

90

95

Gln Leu Gly Ile Gly Ala Leu Leu Ala Ala Asp Val Ala Gln Glu Thr  
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Gln Leu Gly Gly  
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<210> 9

<211> 2059

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

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<223> Where n is an A, T, G, or C

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2059

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<212> PRT  
<213> Homo sapiens

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Pro Gly Gly Tyr Pro Ala Tyr Pro Gly Tyr Pro Gln Pro Gly Tyr Gly  
35 40 45  
His Pro Ala Gly Tyr Pro Gln Pro Met Pro Pro Thr His Pro Met Pro  
50 55 60  
Met Asn Tyr Gly Pro Gly His Gly Tyr Asp Gly Glu Glu Arg Ala Val  
65 70 75 80  
Ser Asp Ser Phe Gly Pro Gly Glu Trp Asp Asp Arg Lys Val Arg His  
85 90 95  
Thr Phe Ile Arg Lys Val Tyr Ser Ile Ile Ser Val Gln Leu Leu Ile  
100 105 110  
Thr Val Ala Ile Ile Ala Ile Phe Thr Phe Val Glu Pro Val Ser Ala  
115 120 125  
Phe Val Arg Arg Asn Val Ala Val Tyr Tyr Val Ser Tyr Ala Val Phe  
130 135 140  
Val Val Thr Tyr Leu Ile Leu Ala Cys Cys Gln Gly Pro Arg Arg Arg  
145 150 155 160  
Phe Pro Trp Asn Ile Ile Leu Leu Thr Leu Phe Thr Phe Ala Met Gly  
165 170 175  
Phe Met Thr Gly Thr Ile Ser Ser Met Tyr Gln Thr Lys Ala Val Ile  
180 185 190  
Ile Ala Met Ile Ile Thr Ala Val Val Ser Ile Ser Val Thr Ile Phe  
195 200 205  
Cys Phe Gln Thr Lys Val Arg Ala Trp Arg Ala Leu Pro Trp Pro Pro  
210 215 220  
Asp Ser Pro Phe Leu Ser Gly Pro Asp Pro Gly Thr Leu Gly Met Phe  
225 230 235 240  
Pro Arg Asp Leu Ile Pro Phe Ser Ser Ser Ala Pro Thr Lys Leu Cys  
245 250 255



Pro Val Ser Val Leu Arg Met Leu Trp Thr Phe Pro Tyr Pro Leu Gly  
 260 265 270

Gly Ser Thr Gly Thr Pro Trp Gln Gly Gln Ser Asp Trp Ala Gly Cys  
 275 280 285

His Ser His Leu Thr Gly Ala Ser Phe Leu Leu Pro Gly Arg Trp Thr  
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Ser Pro Arg Ala Gln Ala Ser Ser Val Ser Trp Glu Leu Cys Ser Trp  
 305 310 315 320

<210> 11  
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 <212> DNA  
 <213> Homo sapiens

Q1

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 gaaatagaat agaaaatatc caaaaaa 807

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Tyr Ala Asp Pro Val Ala Asp Leu Leu Asp Lys Trp Gly Ala Phe Arg  
 20 25 30

Ala Arg Leu Phe Arg Glu Ser Cys Val Phe His Arg Gly Asn Tyr Val  
 35 40 45

Lys Asp Leu Ser Arg Leu Gly Arg Asp Leu Arg Arg Val Leu Ile Leu  
 50 55 60

Asp Asn Ser Pro Ala Ser Tyr Val Phe His Pro Asp Asn Ala Val Ser

65																			
Ala	Gly	Trp	Thr	Gly	Thr	Gly	Thr	Gly	Ala	Glu	Thr	Gln	Glu	Gly	Val				
				85					90					95					
Ser	Pro	Phe	Arg	Pro	Pro	Trp	Pro	Leu	Gly	Ser	Pro	Val	Gly	Gly	Trp				
			100					105					110						
Val	Pro	Ser	Gln	Ser	Phe	Leu	His	Ser	Leu	Pro	Val	Pro	Ala	Ala	His				
			115				120					125							
Ser	Pro	His	Pro	Pro	Ala	Leu													
			130			135													

<210> 13  
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 ctccgactgc ggcccgagc cgccgcccgc cgcccaagtgc cgagctcttg catgtggcca 240  
 tcgtgtgtgc ggggcataac tccagccgag acgtcatcat cctggtgaag tccatgctct 300  
 tctacaggaa aaatccactg cacctccact tgggtgactga cgccgtggcc agaaacatcc 360  
 tggagacgct cttccacaca tggatggtgc ctgctgtccg tgtcagcttt tatcatgccg 420  
 accagctcaa gcccaggtc tcctggatcc ccaacaagca ctactccggc ctctatgggc 480  
 taatgaagct ggtgctgccc agtgcccttg ctgctgagct ggcccgcgctc attgtcctgg 540  
 acacggatgt caccttcgcc tctgacatct cggagctctg ggccctcttt gctcactttt 600  
 ctgacacgca ggcgatcggg cttgtggaga accagagtga ctggtacctg ggcaacctct 660  
 ggaagaacca caggccctgg cctgccttgg gccggggatt taacacaggt gtgacccctgc 720  
 tgcggctgga ccggctccgg caggctggct gggagcagat gtggaggctg acagccaggc 780  
 gggagctcct tagcctgcct gccacctcac tggctgacca ggacatcttc aacgctgtga 840  
 tcaaggagca cccggggcta gtgcagcgct tgccttgtgt ctggaatgtg cagctgtcag 900  
 atcacacact ggccgagcgc tgctactctg aggcgtctga cctcaagggt atccactgga 960  
 actcacaaa gaagcttcgg gtgaagaaca agcatgtgga attcttccgc aatttctacc 1020  
 tgaccttcct ggagtacgat gggaacctgc tgcggagaga gctctttgtg tgccccagcc 1080  
 agccccacc tgggtgctgag cagttgcagc aggcctggc acaactggac gaggaagacc 1140  
 cctgctttga gttccggcag cagcagctca ctgtgcaccg tgtgcatgtc actttcctgc 1200  
 cccatgaacc gccaccccc cggcctcacg atgtcaccct tgtggcccag ctgtccatgg 1260  
 accggctgca gatgttgga ggcctgtgca ggcactggcc tggccccatg agcctggcct 1320  
 tgtacctgac agacgcagaa gctcagcagt tcctgcattt cgtcgaggcc tcaccagtgc 1380  
 ttgctgcccg gcaggacgtg gcctaccatg tgggtgtaccg tgagggggccc ctataccccg 1440  
 tcaaccagct tcgcaacgtg gccttgccc aggcctcac gccttacgtc ttcctcagt 1500  
 acattgactt cctgcctgcc tattctctct acgactacct cagggcctcc attgagcagc 1560  
 tggggctggg cagccggcgc aaggcagcac tgggtggtgcc ggcatttgag accctgcgct 1620  
 accgcttcag cttcccccat tccaagggtg agctgttggc cttgctggat gcgggcactc 1680  
 tctacacctt cagggtaccac gagtggcccc gagggcacgc acccacagac tatgcccgt 1740  
 ggcgggaggc tcaggccccg taccgtgtgc aatgggcggc caactatgaa ccctacgtgg 1800  
 tggtgccacg agactgtccc cgctatgata ctgcctttgt gggcttcggc tggaacaaag 1860  
 tggcccatat tgtggagctg gatgcccagg aatatgagct cctgggtgctg ccgagggcct 1920  
 tcaccatcca tctgccccac gctccaagcc tggacatctc ccgcttccgc tccagcccca 1980  
 cctatcgtga ctgcctccag gccctcaagg acgaattcca ccaggacttg tcccgccacc 2040  
 atggggctgc tgccctcaaa tacctcccag ccctgcagca gcccagagc cctgcccag 2100  
 gctgaggctg ggccggcgct gccctcatc ttagcattgg gcagacacca gggcaacctg 2160

ccctccgcca tccctgctat ttaaattatt taaggtctct gggaagggct ggggcagagc 2220  
atctgtgggg tgggggtcttc cccttgctgc tattgtatgg ctggggactg gtctctctct 2280  
gccccagcca gtttggggct ggttccccca tcttgaattg tttatccctt tttcataatt 2340  
aaagttttaa aacatca 2357

<210> 14  
<211> 695  
<212> PRT  
<213> Homo sapiens

<400> 14  
Met Leu Pro Arg Gly Arg Pro Arg Ala Leu Gly Ala Ala Ala Leu Leu  
1 5 10 15  
Leu Leu Leu Leu Leu Leu Gly Phe Leu Leu Phe Gly Gly Asp Leu Gly  
20 25 30  
Arg Glu Ala Ala Glu Ser Arg Arg Pro Arg Arg Asn Pro Gly Gly Pro  
35 40 45  
Ala Pro Gly Thr Thr Thr Ala Pro Thr Ala Ala Arg Ser Arg Arg Arg  
50 55 60  
Pro Pro Lys Cys Glu Leu Leu His Val Ala Ile Val Cys Ala Gly His  
65 70 75 80  
Asn Ser Ser Arg Asp Val Ile Ile Leu Val Lys Ser Met Leu Phe Tyr  
85 90 95  
Arg Lys Asn Pro Leu His Leu His Leu Val Thr Asp Ala Val Ala Arg  
100 105 110  
Asn Ile Leu Glu Thr Leu Phe His Thr Trp Met Val Pro Ala Val Arg  
115 120 125  
Val Ser Phe Tyr His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp Ile  
130 135 140  
Pro Asn Lys His Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu  
145 150 155 160  
Pro Ser Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr  
165 170 175  
Asp Val Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe Ala  
180 185 190  
His Phe Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp  
195 200 205  
Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu  
210 215 220  
Gly Arg Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu  
225 230 235 240

Arg Gln Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu  
 245 250 255  
 Leu Leu Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn  
 260 265 270  
 Ala Val Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys Val  
 275 280 285  
 Trp Asn Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser  
 290 295 300  
 Glu Ala Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu  
 305 310 315 320  
 Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr  
 325 330 335  
 Phe Leu Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys  
 340 345 350  
 Pro Ser Gln Pro Pro Pro Gly Ala Glu Gln Leu Gln Gln Ala Leu Ala  
 355 360 365  
 Gln Leu Asp Glu Glu Asp Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu  
 370 375 380  
 Thr Val His Arg Val His Val Thr Phe Leu Pro His Glu Pro Pro Pro  
 385 390 395 400  
 Pro Arg Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg  
 405 410 415  
 Leu Gln Met Leu Glu Ala Leu Cys Arg His Trp Pro Gly Pro Met Ser  
 420 425 430  
 Leu Ala Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe  
 435 440 445  
 Val Glu Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His  
 450 455 460  
 Val Val Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn  
 465 470 475 480  
 Val Ala Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile  
 485 490 495  
 Asp Phe Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile  
 500 505 510  
 Glu Gln Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro  
 515 520 525  
 Ala Phe Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val  
 530 535 540

Q1

Glu Leu Leu Ala Leu Leu Asp Ala Gly Thr Leu Tyr Thr Phe Arg Tyr  
 545 550 555 560  
 His Glu Trp Pro Arg Gly His Ala Pro Thr Asp Tyr Ala Arg Trp Arg  
 565 570 575  
 Glu Ala Gln Ala Pro Tyr Arg Val Gln Trp Ala Ala Asn Tyr Glu Pro  
 580 585 590  
 Tyr Val Val Val Pro Arg Asp Cys Pro Arg Tyr Asp Pro Arg Phe Val  
 595 600 605  
 Gly Phe Gly Trp Asn Lys Val Ala His Ile Val Glu Leu Asp Ala Gln  
 610 615 620  
 Glu Tyr Glu Leu Leu Val Leu Pro Glu Ala Phe Thr Ile His Leu Pro  
 625 630 635 640  
 His Ala Pro Ser Leu Asp Ile Ser Arg Phe Arg Ser Ser Pro Thr Tyr  
 645 650 655  
 Arg Asp Cys Leu Gln Ala Leu Lys Asp Glu Phe His Gln Asp Leu Ser  
 660 665 670  
 Arg His His Gly Ala Ala Ala Leu Lys Tyr Leu Pro Ala Leu Gln Gln  
 675 680 685  
 Pro Gln Ser Pro Ala Arg Gly  
 690 695

<210> 15  
 <211> 579  
 <212> DNA  
 <213> Homo sapiens

<400> 15  
 tatggaataa agaaccatga cggagtccca tgcgcagcca gagaagagac caccacccga 60  
 gagaggtttc atcctaccat gtaactctgc ttacagccta cttgcttctc accggcgtgc 120  
 tggggacagc aaagtctgag gactctgggt ggtgtgggcc tgtgtgcaag gagagcagtg 180  
 gccatgggat aaggcctctg cacagctcta gaagcttcaa tcccatttcc acccatacat 240  
 ctctttgtgc tctcacaccc ccacagccct tctggaataa gaccatcaca gcacaggggt 300  
 tgcaagatgt ctaatgccag tcattcacag ggcagctcag accctggcct gcggtgcata 360  
 ctaggtgact ccacatgagg tgtcatgcta gatcctgcag ggagaataag cacacacagg 420  
 cccgtgaccc atgctgtgga cttcatgttc taggaggtag agggagacag acaagaatca 480  
 aatgactgta ctaggccggg cgcactggct cagcctgta atcccagcac tttggggagg 540  
 ccgaggcagg tggatcacga ggccaggcgt tcgagacca 579

<210> 16  
 <211> 656  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> misc\_feature  
 <222> (570)..(576)

<223> Where n is an A, T, C, or G

<400> 16

```
atgaccatgc atccatttac agtaaaggga ttgcctacat ctcagacaac acttcatgta 60
aagtacacaa atcaaggaaa cagcttcac actgatgtta cctttaatct aacaagatct 120
ctataaaaca agaaaacctc tacgtacaga tcttttaaaa ttaaagcagg catctttgct 180
gatccacctc tataagttgc aggttgagta tctcttatct gaaatgctag agaccagaag 240
tgtttcagggt ttcagatatt tagattttgg aatatgttgc tatacacgag atatccaggg 300
gaagagaccc aagtctaaac atgaaattca tttatgtttc atatacacct catatatata 360
tagcctgaag gtaattttat acagtattta taatttgtcc aaggaacaaa gttttgactg 420
tgttttgact atgactcgtc atgtgaagtc atatgtggaa ttttccactt gtggcatcac 480
acaggcactc aaaaagcttc agatttggga gcatattgga tttcgcatat tcagattagg 540
gatgctcaac ccatactcag tttaccagtn nnnnnncata atgtttgcaa ttactcctcc 600
ttttaaatat ataattattt ttggtatggg ggaaaagagt gagaacttta tttcac 656
```

<210> 17

<211> 656

<212> DNA

<213> Homo sapiens

<400> 17

```
atgaccatgc atccatttac agtaaaggga ttgcctacat ctcagacaac acttcatgta 60
aagtacacaa atcaaggaaa cagcttcac actgatgtta cctttaatct aacaagatct 120
ctataaaaca agaaaacctc tacgtacaga tcttttaaaa ttaaagcagg catctttgct 180
gatccacctc tataagttgc aggttgagta tctcttatct gaaatgctag agaccagaag 240
tgtttcagggt ttcagatatt tagattttgg aatatgttgc tatacacgag atatccaggg 300
gaagagaccc aagtctaaac atgaaattca tttatgtttc atatacacct catatatata 360
tagcctgaag gtaattttat acagtattta taatttgtcc aaggaacaaa gttttgactg 420
tgttttgact atgactcgtc atgtgaagtc atatgtggaa ttttccactt gtggcatcac 480
acaggcactc aaaaagcttc agatttggga gcatattgga tttcgcatat tcagattagg 540
gatgctcaac ccatactcag tttaccagta aaaaaacata atgtttgcaa ttactcctcc 600
ttttaaatat ataattattt ttggtatggg ggaaaagagt gagaacttta tttcac 656
```

<210> 18

<211> 164

<212> DNA

<213> Homo sapiens

<400> 18

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taaaaatata aaaaattagc cgggcgtagt ggccggcgcc tgtagtccca gctacttggg 60
aggctgagggc aggagaatgg cgtgaacccg ggaggcagag cttgcagtga gccgagatcc 120
cgccactgca ctccagcctg ggcgacagag cgagactccg tctc 164
```

<210> 19

<211> 164

<212> DNA

<213> Homo sapiens

<400> 19

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taaaaatata aaaaattagc cgggcgtagt ggccggcgcc tgtagtccca gctacttggg 60
aggctgagggc aggagaatgg cgtgaacccg ggaggcagag cttgcagtga gccgagatcc 120
cgccactgca ctccagcctg ggcgacagag cgagactccg tctc 164
```

<210> 20  
 <211> 164  
 <212> DNA  
 <213> Homo sapiens

<400> 20  
 taaaaatata aaaaattagc cgggcgtagt ggcgggcgcc ttagtccca gctacttggg 60  
 aggctgaggc aggagaatgg cgtgaacccg ggaggcagag cttgcagtga gccgagatcc 120  
 cgccactgca ctccagcctg ggcgacagag cgagactccg tctc 164

<210> 21  
 <211> 164  
 <212> DNA  
 <213> Homo sapiens

<400> 21  
 taaaaatata aaaaattagc cgggcgtagt ggcgggcgcc ttagtccca gctacttggg 60  
 aggctgaggc aggagaatgg cgtgaacccg ggaggcagag cttgcagtga gccgagatcc 120  
 cgccactgca ctccagcctg ggcgacagag cgagactccg tctc 164

<210> 22  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> VARIANT  
 <222> (260)..(274)  
 <223> Where Xaa is any amino acid as defined in the  
 specification

<220>  
 <221> VARIANT  
 <222> (295)..(304)  
 <223> Where Xaa is any amino acid as defined in the  
 specification

<400> 22  
 His Leu His Leu Val Thr Asp Ala Val Ala Arg Asn Ile Leu Glu Thr  
 1 5 10 15  
 Leu Phe His Thr Trp Met Val Pro Ala Ile Asp Pro Val Ser Pro Tyr  
 20 25 30  
 His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp Ile Pro Asn Lys His  
 35 40 45  
 Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu Pro Asn Ala Leu  
 50 55 60  
 Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr Asp Val Thr Phe  
 65 70 75 80  
 Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe Ala His Phe Ser Asp  
 85 90 95

Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly  
 100 105 110  
 Asn Leu Trp Leu Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Phe  
 115 120 125  
 Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu Arg Gln Ala Gly  
 130 135 140  
 Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu Leu Leu Ser Leu  
 145 150 155 160  
 Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys  
 165 170 175  
 Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys Val Trp Asn Val Gln  
 180 185 190  
 Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser Glu Ala Ser Asp  
 195 200 205  
 Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn  
 210 215 220  
 Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr Phe Leu Glu Tyr  
 225 230 235 240  
 Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys Pro Ser Gln Pro  
 245 250 255  
 Pro Pro Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 260 265 270  
 Xaa Xaa Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu Thr Val His Arg  
 275 280 285  
 Val His Val Thr Phe Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 290 295 300  
 Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu  
 305 310 315 320  
 Glu Ala Leu Cys Arg His Thr Pro Gly Pro Met Ser Leu Ala Leu Tyr  
 325 330 335  
 Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe Val Glu Ala Ser  
 340 345 350  
 Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His Val Val Tyr Arg  
 355 360 365  
 Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn Val Ala Leu Ala  
 370 375 380  
 Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile Asp Phe Leu Pro  
 385 390 395 400



Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile Glu Gln Leu Gly  
405 410 415  
Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro Ala Phe Glu Thr  
420 425 430  
Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val Glu Leu Leu Ala  
435 440 445  
Leu Leu Asp Ala Gly Thr Leu  
450 455

<210> 23  
<211> 454  
<212> PRT  
<213> Homo sapiens

<400> 23  
His Phe His Leu Ile Ala Asp Ser Ile Ala Glu Gln Ile Leu Ala Thr  
1 5 10 15

Leu Phe Gln Thr Trp Met Val Pro Ala Val Arg Val Asp Phe Tyr Asn  
20 25 30

Ala Asp Glu Leu Lys Ser Glu Val Ser Trp Ile Pro Asn Lys His Tyr  
35 40 45

Ser Gly Ile Tyr Gly Leu Met Lys Leu Val Leu Thr Lys Thr Leu Pro  
50 55 60

Ala Asn Leu Glu Arg Val Ile Val Leu Asp Thr Asp Ile Thr Phe Ala  
65 70 75 80

Thr Asp Ile Ala Glu Leu Trp Ala Val Phe His Lys Phe Lys Gly Gln  
85 90 95

Gln Val Leu Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly Asn  
100 105 110

Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Tyr Asn  
115 120 125

Thr Gly Val Ile Leu Leu Leu Leu Asp Lys Leu Arg Lys Met Lys Trp  
130 135 140

Glu Gln Met Trp Arg Leu Thr Ala Glu Arg Glu Leu Met Gly Met Leu  
145 150 155 160

Ser Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys Gln  
165 170 175

Asn Pro Phe Leu Val Tyr Gln Leu Pro Cys Phe Trp Asn Val Gln Leu  
180 185 190

Ser Asp His Thr Arg Ser Glu Gln Cys Tyr Arg Asp Val Ser Asp Leu

195                      200                      205  
 Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn Lys  
 210                      215                      220  
 His Val Glu Phe Phe Arg Asn Leu Tyr Leu Thr Phe Leu Glu Tyr Asp  
 225                      230                      235                      240  
 Gly Asn Leu Leu Arg Arg Glu Leu Phe Gly Cys Pro Ser Glu Thr Asp  
 245                      250                      255  
 Val Asn Asn Glu Asn Leu Gln Lys Gln Leu Ser Glu Leu Asp Glu Asp  
 260                      265                      270  
 Asp Leu Cys Tyr Glu Phe Arg Arg Glu Arg Phe Thr Val His Arg Thr  
 275                      280                      285  
 His Leu Tyr Phe Leu His Tyr Glu Phe Glu Pro Ser Ala Asp Asn Thr  
 290                      295                      300  
 Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu  
 305                      310                      315                      320  
 Glu Ala Ile Cys Lys His Trp Glu Gly Pro Ile Ser Leu Ala Leu Tyr  
 325                      330                      335  
 Leu Ser Asp Ala Glu Ala Gln Gln Phe Leu Arg Tyr Ala Gln Gly Ser  
 340                      345                      350  
 Glu Val Leu Met Ser Arg Gln Asn Val Gly Tyr His Ile Val Tyr Lys  
 355                      360                      365  
 Glu Gly Gln Phe Tyr Pro Val Asn Leu Leu Arg Asn Val Ala Met Lys  
 370                      375                      380  
 His Ile Ser Thr Pro Tyr Met Phe Leu Ser Asp Ile Asp Phe Leu Pro  
 385                      390                      395                      400  
 Met Tyr Gly Leu Tyr Glu Tyr Leu Arg Lys Ser Val Ile Gln Leu Asp  
 405                      410                      415  
 Leu Ala Asn Thr Lys Lys Ala Met Ile Val Pro Ala Phe Glu Thr Leu  
 420                      425                      430  
 Arg Tyr Arg Leu Ser Phe Pro Lys Ser Lys Ala Glu Leu Leu Ser Met  
 435                      440                      445  
 Leu Asp Met Gly Thr Leu  
 450

<210> 24  
 <211> 585  
 <212> PRT  
 <213> Homo sapiens  
 <220>

<221> VARIANT  
 <222> (260)..(274)  
 <223> Where Xaa is any amino acid as defined in the  
 specification

<220>  
 <221> VARIANT  
 <222> (295)..(304)  
 <223> Where Xaa is any amino acid as defined in the  
 specification

<400> 24  
 His Leu His Leu Val Thr Asp Ala Val Ala Arg Asn Ile Leu Glu Thr  
 1 5 10 15  
 Leu Phe His Thr Trp Met Val Pro Ala Ile Asp Pro Val Ser Pro Tyr  
 20 25 30  
 His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp Ile Pro Asn Lys His  
 35 40 45  
 Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu Pro Asn Ala Leu  
 50 55 60  
 Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr Asp Val Thr Phe  
 65 70 75 80  
 Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe Ala His Phe Ser Asp  
 85 90 95  
 Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly  
 100 105 110  
 Asn Leu Trp Leu Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Phe  
 115 120 125  
 Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu Arg Gln Ala Gly  
 130 135 140  
 Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu Leu Leu Ser Leu  
 145 150 155 160  
 Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys  
 165 170 175  
 Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys Val Trp Asn Val Gln  
 180 185 190  
 Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser Glu Ala Ser Asp  
 195 200 205  
 Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn  
 210 215 220  
 Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr Phe Leu Glu Tyr  
 225 230 235 240

Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys Pro Ser Gln Pro  
 245 250 255  
 Pro Pro Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 260 265 270  
 Xaa Xaa Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu Thr Val His Arg  
 275 280 285  
 Val His Val Thr Phe Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 290 295 300  
 Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu  
 305 310 315 320  
 Glu Ala Leu Cys Arg His Thr Pro Gly Pro Met Ser Leu Ala Leu Tyr  
 325 330 335  
 Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe Val Glu Ala Ser  
 340 345 350  
 Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His Val Val Tyr Arg  
 355 360 365  
 Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn Val Ala Leu Ala  
 370 375 380  
 Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile Asp Phe Leu Pro  
 385 390 395 400  
 Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile Glu Gln Leu Gly  
 405 410 415  
 Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro Ala Phe Glu Thr  
 420 425 430  
 Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val Glu Leu Leu Ala  
 435 440 445  
 Leu Leu Asp Ala Gly Thr Leu Tyr Thr Phe Arg Tyr Gly Glu Trp Pro  
 450 455 460  
 Arg Gly His Ala Pro Thr Asp Tyr Ala Arg Trp Arg Glu Ala Gln Ala  
 465 470 475 480  
 Pro Tyr Arg Val Gln Trp Ala Ala Asn Tyr Glu Pro Tyr Val Val Val  
 485 490 495  
 Pro Arg Asp Cys Pro Arg Tyr Asp Pro Arg Phe Val Gly Phe Gly Trp  
 500 505 510  
 Asn Lys Val Ala His Ile Val Glu Leu Asp Ala Gln Glu Tyr Glu Leu  
 515 520 525  
 Leu Val Leu Pro Glu Ala Phe Thr Ile His Leu Pro His Ala Pro Ser  
 530 535 540

Leu Asp Ile Ser Arg Phe Arg Ser Ser Pro Thr Tyr Arg Asp Cys Leu  
545 550 555 560

Gln Ala Leu Lys Asp Glu Phe His Gln Asp Leu Ser Arg His His Gly  
565 570 575

Ala Ala Ala Leu Lys Tyr Leu Pro Ala  
580 585

<210> 25  
<211> 584  
<212> PRT  
<213> Homo sapiens

<400> 25  
His Phe His Leu Ile Ala Asp Ser Ile Ala Glu Gln Ile Leu Ala Thr  
1 5 10 15

Leu Phe Gln Thr Trp Met Val Pro Ala Val Arg Val Asp Phe Tyr Asn  
20 25 30

Ala Asp Glu Leu Lys Ser Glu Val Ser Trp Ile Pro Asn Lys His Tyr  
35 40 45

Q1 Ser Gly Ile Tyr Gly Leu Met Lys Leu Val Leu Thr Lys Thr Leu Pro  
50 55 60

Ala Asn Leu Glu Arg Val Ile Val Leu Asp Thr Asp Ile Thr Phe Ala  
65 70 75 80

Thr Asp Ile Ala Glu Leu Trp Ala Val Phe His Lys Phe Lys Gly Gln  
85 90 95

Gln Val Leu Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly Asn  
100 105 110

Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Tyr Asn  
115 120 125

Thr Gly Val Ile Leu Leu Leu Leu Asp Lys Leu Arg Lys Met Lys Trp  
130 135 140

Glu Gln Met Trp Arg Leu Thr Ala Glu Arg Glu Leu Met Gly Met Leu  
145 150 155 160

Ser Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys Gln  
165 170 175

Asn Pro Phe Leu Val Tyr Gln Leu Pro Cys Phe Trp Asn Val Gln Leu  
180 185 190

Ser Asp His Thr Arg Ser Glu Gln Cys Tyr Arg Asp Val Ser Asp Leu  
195 200 205

Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn Lys  
210 215 220

His Val Glu Phe Phe Arg Asn Leu Tyr Leu Thr Phe Leu Glu Tyr Asp  
 225 230 235 240  
 Gly Asn Leu Leu Arg Arg Glu Leu Phe Gly Cys Pro Ser Glu Ala Asp  
 245 250 255  
 Val Asn Ser Glu Asn Leu Gln Lys Gln Leu Ser Glu Leu Asp Glu Asp  
 260 265 270  
 Asp Leu Cys Tyr Glu Phe Arg Arg Glu Arg Phe Thr Val His Arg Thr  
 275 280 285  
 His Leu Tyr Phe Leu His Tyr Glu Tyr Glu Pro Ala Ala Asp Ser Thr  
 290 295 300  
 Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu  
 305 310 315 320  
 Glu Ala Ile Cys Lys His Trp Glu Gly Pro Ile Ser Leu Ala Leu Tyr  
 325 330 335  
 Leu Ser Asp Ala Glu Ala Gln Gln Phe Leu Arg Tyr Ala Gln Gly Ser  
 340 345 350  
 Glu Val Leu Met Ser Arg His Asn Val Gly Tyr His Ile Val Tyr Lys  
 355 360 365  
 Glu Gly Gln Phe Tyr Pro Val Asn Leu Leu Arg Asn Val Ala Met Lys  
 370 375 380  
 His Ile Ser Thr Pro Tyr Met Phe Leu Ser Asp Ile Asp Phe Leu Pro  
 385 390 395 400  
 Met Tyr Gly Leu Tyr Glu Tyr Leu Arg Lys Ser Val Ile Gln Leu Asp  
 405 410 415  
 Leu Ala Asn Thr Lys Lys Ala Met Ile Val Pro Ala Phe Glu Thr Leu  
 420 425 430  
 Arg Tyr Arg Leu Ser Phe Pro Lys Ser Lys Ala Glu Leu Leu Ser Met  
 435 440 445  
 Leu Asp Met Gly Thr Leu Phe Thr Phe Arg Tyr His Val Trp Thr Lys  
 450 455 460  
 Gly His Ala Pro Thr Asn Phe Ala Lys Trp Arg Thr Ala Thr Thr Pro  
 465 470 475 480  
 Tyr Arg Val Glu Trp Glu Ala Asp Phe Glu Pro Tyr Val Val Val Arg  
 485 490 495  
 Arg Asp Cys Pro Glu Tyr Asp Arg Arg Phe Val Gly Phe Gly Trp Asn  
 500 505 510  
 Lys Val Ala His Ile Met Glu Leu Asp Val Gln Glu Tyr Glu Phe Ile  
 515 520 525

Q1

Val Leu Pro Asn Ala Tyr Met Ile His Met Pro His Ala Pro Ser Phe  
530 535 540

Asp Ile Thr Lys Phe Arg Ser Asn Lys Gln Tyr Arg Ile Cys Leu Lys  
545 550 555 560

Thr Leu Lys Glu Glu Phe Gln Gln Asp Met Ser Arg Arg Tyr Gly Phe  
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Ala Ala Leu Lys Tyr Leu Thr Ala  
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<210> 26

<211> 189

<212> PRT

<213> Homo sapiens

Q1

<400> 26

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20 25 30

Glu Pro Ala Ala Asp Ser Thr Asp Val Thr Leu Val Ala Gln Leu Ser  
35 40 45

Met Asp Arg Leu Gln Met Leu Glu Ala Ile Cys Lys His Trp Glu Gly  
50 55 60

Pro Ile Ser Leu Ala Leu Tyr Leu Ser Asp Ala Glu Ala Gln Gln Phe  
65 70 75 80

Leu Arg Tyr Ala Gln Gly Ser Glu Val Leu Met Ser Arg His Asn Val  
85 90 95

Gly Tyr His Ile Val Tyr Lys Glu Gly Gln Phe Tyr Pro Val Asn Leu  
100 105 110

Leu Arg Asn Val Ala Met Lys His Ile Ser Thr Pro Tyr Met Phe Leu  
115 120 125

Ser Asp Ile Asp Phe Leu Pro Met Tyr Gly Leu Tyr Glu Tyr Leu Arg  
130 135 140

Lys Ser Val Ile Gln Leu Asp Leu Ala Asn Thr Lys Lys Ala Met Ile  
145 150 155 160

Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg Leu Ser Phe Pro Lys Ser  
165 170 175

Lys Ala Glu Leu Leu Ser Met Leu Asp Met Gly Thr Leu  
180 185

<210> 27  
 <211> 189  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
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 Pro Pro Pro Arg Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met  
 35 40 45  
 Asp Arg Leu Gln Met Leu Glu Ala Leu Cys Arg His Thr Pro Gly Pro  
 50 55 60  
 Met Ser Leu Ala Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu  
 65 70 75 80  
 His Phe Val Glu Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala  
 85 90 95  
 Tyr His Val Val Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu  
 100 105 110  
 Arg Asn Val Ala Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser  
 115 120 125  
 Asp Ile Asp Phe Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala  
 130 135 140  
 Ser Ile Glu Gln Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val  
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 Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser  
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<210> 28  
 <211> 173  
 <212> DNA  
 <213> Homo sapiens

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<210> 29  
 <211> 173  
 <212> DNA



<213> Homo sapiens

<400> 29

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<210> 30

<211> 704

<212> DNA

<213> Homo sapiens

<400> 30

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ctctgcccc tgggggctat gggcagccat ctgtcctgcc aggagggtat cctgcctacc 180  
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tgagtgcgac acttttatcc 360  
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<210> 31

<211> 704

<212> DNA

<213> Homo sapiens

<400> 31

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<210> 32

<211> 1006

<212> DNA

<213> Homo sapiens

<400> 32

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tgggcttgt	cctggcttgt	gacgctataa	gacagagcag	gccacatgtg	gccatctgct	960
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<210> 33  
 <211> 1006  
 <212> DNA  
 <213> Homo sapiens

21

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<210> 34  
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 <212> DNA  
 <213> Homo sapiens

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tccttcccc	tgagtaacat	gcccagtttc	ctttctgtcc	tggagacagg	tggcctctct	300
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<210> 35  
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 <212> DNA  
 <213> Homo sapiens

21

<400> 35						
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<210> 36  
 <211> 1006  
 <212> DNA  
 <213> Homo sapiens

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<210> 37  
 <211> 1006  
 <212> DNA  
 <213> Homo sapiens

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 <211> 72  
 <212> PRT  
 <213> Homo sapiens

<400> 38  
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 20 25 30  
 Thr Gln Leu Val Leu Gly Asn Arg Lys His Thr Ile Ser Pro Glu Asp  
 35 40 45  
 Tyr Ile Thr Gly Ala Leu Gln Ile Tyr Thr Asp Ile Ile Tyr Ile Phe  
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 Thr Phe Val Leu Gln Leu Met Gly  
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<210> 39  
 <211> 72  
 <212> PRT  
 <213> Rattus rattus

<400> 39  
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20

25

30

Thr Gln Leu Leu Met Gly Asn Arg Arg His Ser Leu Ser Pro Glu Glu  
 35 40 45

Tyr Ile Phe Gly Ala Leu Asn Ile Tyr Leu Asp Ile Ile Tyr Ile Phe  
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Thr Phe Phe Leu Gln Leu Phe Gly  
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<210> 40  
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 <212> DNA  
 <213> Homo sapiens

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 aaaatatcc 549

<210> 41  
 <211> 549  
 <212> DNA  
 <213> Homo sapiens

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 <211> 549  
 <212> DNA  
 <213> Homo sapiens

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agtccttcct gcattcattg cctgtgcctg ccgcccactc ccctcatcca cctgccctgt 360  
agccatatgg tcttttcccc tcgcacaaaag cagagcatct gccatgcaca gggggcccca 420  
cagggcaacg gagtttgga agtttcaatt tttcgaattg ccagttgtga cctactgatg 480  
gcccacagaa ttaatttagt gggttctgat tgggaatttt aacaaaatga aatagaatag 540  
aaaatatcc 549

<210> 43  
<211> 376  
<212> DNA  
<213> Homo sapiens

<400> 43  
tcgacctgga cgagaccctg gtgcacagct ccttcaagcc agtgaacaac gcggacttca 60  
tcatccctgt ggagattgat ggggtggtcc accaggtcta cgtgttgaag cgtcctcacg 120  
tggatgagtt cctgcagcga atgggcgagc tctttgaatg tgtgctgttc actgctagcc 180  
tcgccaagta cgcagaccca gtagctgacc tgctggacaa atggggggcc ttccggggcc 240  
ggctgtttcg agagtcctgc gtcttccacc ggggggaacta cgtgaaggac ctgagccggg 300  
tgggtcgaga cctgcggcgg gtgctcatcc tggacaattc acctgcctcc tatgtcttcc 360  
atccagacaa tgctgt 376

<210> 44  
<211> 376  
<212> DNA  
<213> Homo sapiens

<400> 44  
tcgacctgga cgagaccctg gtgcacagct ccttcaagcc agtgaacaac gcggacttca 60  
tcatccctgt ggagattgat ggggtggtcc accaggtcta cgtgttgaag cgtcctcacg 120  
tggatgagtt cctgcagcga atgggcgagc tctttgaatg tgtgctgttc actgctagcc 180  
tcgccaagta cgcagaccca gtagctgacc tgctggacaa atggggggcc ttccggggcc 240  
ggctgtttcg agagtcctgc gtcttccacc ggggggaacta cgtgaaggac ctgagccggg 300  
tgggtcgaga cctgcggcgg gtgctcatcc tggacaattc acctgcctcc tatgtcttcc 360  
atccagacaa tgctgt 376

<210> 45  
<211> 157  
<212> DNA  
<213> Homo sapiens

<400> 45  
tctggaatgt gcagctgtca gatcacacac tggccgagcg ctgctactct gaggcgtctg 60  
acctcaaggt gatccactgg aactcaccaa agaagcttcg ggtgaagaac aagcatgtgg 120  
aattcttccg caatttctac ctgaccttcc tggagta 157

<210> 46  
<211> 157  
<212> DNA  
<213> Homo sapiens

<400> 46  
tctggaatgt gcagctgtca gaccacaccc gctccgagca gtgctacaga gacgtgtctg 60

atctaaaggt cattcactgg aactccccca agaagctccg ggtgaagaac aagcatgtgg 120  
 agtttttttcg caacctctac ctgaccttcc tggagta 157

<210> 47  
 <211> 619  
 <212> PRT  
 <213> Homo sapiens

<400> 47  
 Lys Cys Glu Leu Leu His Val Ala Ile Val Cys Ala Gly His Asn Ser  
 1 5 10 15  
 Ser Arg Asp Val Ile Ile Leu Val Lys Ser Met Leu Phe Tyr Arg Lys  
 20 25 30  
 Asn Pro Leu His Leu His Leu Val Thr Asp Ala Val Ala Arg Asn Ile  
 35 40 45  
 Leu Glu Thr Leu Phe His Thr Trp Met Val Pro Ala Val Arg Val Ser  
 50 55 60  
 Phe Tyr His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp Ile Pro Asn  
 65 70 75 80  
 Lys His Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu Pro Ser  
 85 90 95  
 Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr Asp Val  
 100 105 110  
 Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe Ala His Phe  
 115 120 125  
 Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr  
 130 135 140  
 Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu Gly Arg  
 145 150 155 160  
 Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu Arg Gln  
 165 170 175  
 Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu Leu Leu  
 180 185 190  
 Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val  
 195 200 205  
 Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys Val Trp Asn  
 210 215 220  
 Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser Glu Ala  
 225 230 235 240  
 Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val  
 245 250 255

Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr Phe Leu  
 260 265 270  
 Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys Pro Ser  
 275 280 285  
 Gln Pro Pro Pro Gly Ala Glu Gln Leu Gln Gln Ala Leu Ala Gln Leu  
 290 295 300  
 Asp Glu Glu Asp Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu Thr Val  
 305 310 315 320  
 His Arg Val His Val Thr Phe Leu Pro His Glu Pro Pro Pro Pro Arg  
 325 330 335  
 Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln  
 340 345 350  
 Met Leu Glu Ala Leu Cys Arg His Trp Pro Gly Pro Met Ser Leu Ala  
 355 360 365  
 Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe Val Glu  
 370 375 380  
 Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His Val Val  
 385 390 395 400  
 Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn Val Ala  
 405 410 415  
 Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile Asp Phe  
 420 425 430  
 Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile Glu Gln  
 435 440 445  
 Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro Ala Phe  
 450 455 460  
 Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val Glu Leu  
 465 470 475 480  
 Leu Ala Leu Leu Asp Ala Gly Thr Leu Tyr Thr Phe Arg Tyr His Glu  
 485 490 495  
 Trp Pro Arg Gly His Ala Pro Thr Asp Tyr Ala Arg Trp Arg Glu Ala  
 500 505 510  
 Gln Ala Pro Tyr Arg Val Gln Trp Ala Ala Asn Tyr Glu Pro Tyr Val  
 515 520 525  
 Val Val Pro Arg Asp Cys Pro Arg Tyr Asp Pro Arg Phe Val Gly Phe  
 530 535 540  
 Gly Trp Asn Lys Val Ala His Ile Val Glu Leu Asp Ala Gln Glu Tyr  
 545 550 555 560



Glu Leu Leu Val Leu Pro Glu Ala Phe Thr Ile His Leu Pro His Ala  
565 570 575

Pro Ser Leu Asp Ile Ser Arg Phe Arg Ser Ser Pro Thr Tyr Arg Asp  
580 585 590

Cys Leu Gln Ala Leu Lys Asp Glu Phe His Gln Asp Leu Ser Arg His  
595 600 605

His Gly Ala Ala Ala Leu Lys Tyr Leu Pro Ala  
610 615

<210> 48

<211> 619

<212> PRT

<213> Homo sapiens

<400> 48

Lys Cys Glu Thr Ile His Val Ala Ile Val Cys Ala Gly Tyr Asn Ala  
1 5 10 15

*Q1* Ser Arg Asp Val Val Thr Leu Val Lys Ser Val Leu Phe His Arg Arg  
20 25 30

Asn Pro Leu His Phe His Leu Ile Ala Asp Ser Ile Ala Glu Gln Ile  
35 40 45

Leu Ala Thr Leu Phe Gln Thr Trp Met Val Pro Ala Val Arg Val Asp  
50 55 60

Phe Tyr Asn Ala Asp Glu Leu Lys Ser Glu Val Ser Trp Ile Pro Asn  
65 70 75 80

Lys His Tyr Ser Gly Ile Tyr Gly Leu Met Lys Leu Val Leu Thr Lys  
85 90 95

Thr Leu Pro Ala Asn Leu Glu Arg Val Ile Val Leu Asp Thr Asp Ile  
100 105 110

Thr Phe Ala Thr Asp Ile Ala Glu Leu Trp Ala Val Phe His Lys Phe  
115 120 125

Lys Gly Gln Gln Val Leu Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr  
130 135 140

Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu Gly Arg  
145 150 155 160

Gly Tyr Asn Thr Gly Val Ile Leu Leu Leu Leu Asp Lys Leu Arg Lys  
165 170 175

Met Lys Trp Glu Gln Met Trp Arg Leu Thr Ala Glu Arg Glu Leu Met  
180 185 190

Gly Met Leu Ser Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val

195                      200                      205  
 Ile Lys Gln Asn Pro Phe Leu Val Tyr Gln Leu Pro Cys Phe Trp Asn  
     210                      215                      220  
 Val Gln Leu Ser Asp His Thr Arg Ser Glu Gln Cys Tyr Arg Asp Val  
     225                      230                      235                      240  
 Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val  
                                  245                      250                      255  
 Lys Asn Lys His Val Glu Phe Phe Arg Asn Leu Tyr Leu Thr Phe Leu  
                                  260                      265                      270  
 Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Gly Cys Pro Ser  
                                  275                      280                      285  
 Glu Ala Asp Val Asn Ser Glu Asn Leu Gln Lys Gln Leu Ser Glu Leu  
                                  290                      295                      300  
 Asp Glu Asp Asp Leu Cys Tyr Glu Phe Arg Arg Glu Arg Phe Thr Val  
     305                      310                      315                      320  
 His Arg Thr His Leu Tyr Phe Leu His Tyr Glu Tyr Glu Pro Ala Ala  
                                  325                      330                      335  
 Asp Ser Thr Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu  
                                  340                      345                      350  
 Gln Met Leu Glu Ala Ile Cys Lys His Trp Glu Gly Pro Ile Ser Leu  
                                  355                      360                      365  
 Ala Leu Tyr Leu Ser Asp Ala Glu Ala Gln Gln Phe Leu Arg Tyr Ala  
                                  370                      375                      380  
 Gln Gly Ser Glu Val Leu Met Ser Arg His Asn Val Gly Tyr His Ile  
     385                      390                      395                      400  
 Val Tyr Lys Glu Gly Gln Phe Tyr Pro Val Asn Leu Leu Arg Asn Val  
                                  405                      410                      415  
 Ala Met Lys His Ile Ser Thr Pro Tyr Met Phe Leu Ser Asp Ile Asp  
                                  420                      425                      430  
 Phe Leu Pro Met Tyr Gly Leu Tyr Glu Tyr Leu Arg Lys Ser Val Ile  
                                  435                      440                      445  
 Gln Leu Asp Leu Ala Asn Thr Lys Lys Ala Met Ile Val Pro Ala Phe  
                                  450                      455                      460  
 Glu Thr Leu Arg Tyr Arg Leu Ser Phe Pro Lys Ser Lys Ala Glu Leu  
     465                      470                      475                      480  
 Leu Ser Met Leu Asp Met Gly Thr Leu Phe Thr Phe Arg Tyr His Val  
                                  485                      490                      495  
 Trp Thr Lys Gly His Ala Pro Thr Asn Phe Ala Lys Trp Arg Thr Ala

500	505	510
Thr Thr Pro Tyr Arg Val Glu Trp Glu Ala Asp Phe Glu Pro Tyr Val		
515	520	525
Val Val Arg Arg Asp Cys Pro Glu Tyr Asp Arg Arg Phe Val Gly Phe		
530	535	540
Gly Trp Asn Lys Val Ala His Ile Met Glu Leu Asp Val Gln Glu Tyr		
545	550	555
Glu Phe Ile Val Leu Pro Asn Ala Tyr Met Ile His Met Pro His Ala		
565	570	575
Pro Ser Phe Asp Ile Thr Lys Phe Arg Ser Asn Lys Gln Tyr Arg Ile		
580	585	590
Cys Leu Lys Thr Leu Lys Glu Glu Phe Gln Gln Asp Met Ser Arg Arg		
595	600	605
Tyr Gly Phe Ala Ala Leu Lys Tyr Leu Thr Ala		
610	615	

<210> 49  
 <211> 181  
 <212> PRT  
 <213> Homo sapiens

<400> 49  
 Leu Val Leu Pro Ser Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val  
 1 5 10 15  
 Leu Asp Thr Asp Val Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala  
 20 25 30  
 Leu Phe Ala His Phe Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn  
 35 40 45  
 Gln Ser Asp Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp  
 50 55 60  
 Pro Ala Leu Gly Arg Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu  
 65 70 75 80  
 Asp Arg Leu Arg Gln Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala  
 85 90 95  
 Arg Arg Glu Leu Leu Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp  
 100 105 110  
 Ile Phe Asn Ala Val Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu  
 115 120 125  
 Pro Cys Val Trp Asn Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg  
 130 135 140

Cys Tyr Ser Glu Ala Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro  
145 150 155 160

Lys Lys Leu Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe  
165 170 175

Tyr Leu Thr Phe Leu  
180

<210> 50

<211> 230

<212> PRT

<213> Helicobacter pylori

<400> 50

Phe Leu Asn Leu Glu Glu Asn Asp Glu Asn Tyr Phe Tyr Gly Val Leu  
1 5 10 15

Glu Val Glu Lys His His Met Met Glu Gly Phe Leu Phe Cys Asn Leu  
20 25 30

Asp Tyr Gln Arg Lys Lys Asn Phe Thr Leu Arg Met His Glu Leu Leu  
35 40 45

Arg Gly Asn Glu Ala Lys Gly Glu Leu Asp Phe Thr Lys Trp Cys Trp  
50 55 60

Pro Asn Met Lys Ala Leu Gly Ile Glu Tyr Cys Val Phe Pro Tyr Tyr  
65 70 75 80

Tyr Thr Ile Lys Asp Phe Ser Asn Ala Tyr Leu Asn Glu Asn Tyr Lys  
85 90 95

Lys Thr Ile Leu Glu Ala Arg Glu Asn Pro Thr Ile Ile His Tyr Asp  
100 105 110

Ala Trp Trp Gly Ala Val Lys Pro Trp Asp Tyr Pro Phe Gly Leu Lys  
115 120 125

Ala Asp Leu Trp Leu Asn Ala Leu Ala Lys Thr Pro Phe Met Ser Asp  
130 135 140

Trp Ile Asp Ser Ile Ala Arg Val Glu Ile Gly Ser Glu Lys Trp His  
145 150 155 160

Arg Tyr His Ser Ile Val Ala Tyr His Tyr Tyr Phe Pro Leu Trp Lys  
165 170 175

Thr Glu Glu Gln Ile Ala His Asp Ala Leu Lys Thr Phe Leu Asp His  
180 185 190

Tyr Phe Ser Cys Ile His Ala Ala Ile Lys Gln Glu Asn Leu Gly Met  
195 200 205

Phe Leu Asn His Tyr Phe Ser His Ala His Ala Glu Ile Lys Glu Asn  
210 215 220

Q1

Ser Leu Glu Met Phe Leu  
225 230

<210> 51  
<211> 756  
<212> PRT  
<213> Homo sapiens

<400> 51  
Met Leu Gly Ile Cys Arg Gly Arg Arg Lys Phe Leu Ala Ala Ser Leu  
1 5 10 15

Ser Leu Leu Cys Ile Pro Ala Ile Thr Trp Ile Tyr Leu Phe Ser Gly  
20 25 30

Ser Phe Glu Asp Gly Lys Pro Val Ser Leu Ser Pro Leu Glu Ser Gln  
35 40 45

Ala His Ser Pro Arg Tyr Thr Ala Ser Ser Gln Arg Glu Arg Glu Ser  
50 55 60

Leu Glu Val Arg Met Arg Glu Val Glu Glu Glu Asn Arg Ala Leu Arg  
65 70 75 80

Q1 Arg Gln Leu Ser Leu Ala Gln Gly Arg Ala Pro Ser His Arg Arg Gly  
85 90 95

Asn His Ser Lys Thr Tyr Ser Met Glu Glu Gly Thr Gly Asp Ser Glu  
100 105 110

Asn Leu Arg Ala Gly Ile Val Ala Gly Asn Ser Ser Glu Cys Gly Gln  
115 120 125

Gln Pro Val Val Glu Lys Cys Glu Thr Ile His Val Ala Ile Val Cys  
130 135 140

Ala Gly Tyr Asn Ala Ser Arg Asp Val Val Thr Leu Val Lys Ser Val  
145 150 155 160

Leu Phe His Arg Arg Asn Pro Leu His Phe His Leu Ile Ala Asp Ser  
165 170 175

Ile Ala Glu Gln Ile Leu Ala Thr Leu Phe Gln Thr Trp Met Val Pro  
180 185 190

Ala Val Arg Val Asp Phe Tyr Asn Ala Asp Glu Leu Lys Ser Glu Val  
195 200 205

Ser Trp Ile Pro Asn Lys His Tyr Ser Gly Ile Tyr Gly Leu Met Lys  
210 215 220

Leu Val Leu Thr Lys Thr Leu Pro Ala Asn Leu Glu Arg Val Ile Val  
225 230 235 240

Leu Asp Thr Asp Ile Thr Phe Ala Thr Asp Ile Ala Glu Leu Trp Ala

245								250					255			
Val	Phe	His	Lys 260	Phe	Lys	Gly	Gln	Gln	Val	Leu	Gly	Leu	Val	Glu	Asn	
Gln	Ser	Asp 275	Trp	Tyr	Leu	Gly	Asn 280	Leu	Trp	Lys	Asn	His 285	Arg	Pro	Trp	
Pro	Ala 290	Leu	Gly	His	Gly	Tyr 295	Asn	Thr	Gly	Val	Ile 300	Leu	Leu	Leu	Leu	
Asp 305	Lys	Leu	Arg	Lys	Met 310	Lys	Trp	Glu	Gln	Met 315	Trp	Arg	Leu	Thr	Ala 320	
Glu	Arg	Glu	Leu	Met 325	Gly	Met	Leu	Ser	Thr 330	Ser	Leu	Ala	Asp	Gln	Asp	
Ile	Phe	Asn	Ala 340	Val	Ile	Lys	Gln	Asn 345	Pro	Phe	Leu	Val	Tyr 350	Gln	Leu	
Pro	Cys	Phe 355	Trp	Asn	Val	Gln	Leu 360	Ser	Asp	His	Thr	Arg 365	Ser	Glu	Gln	
Cys	Tyr 370	Arg	Asp	Val	Ser	Asp 375	Leu	Lys	Val	Ile	His 380	Trp	Asn	Ser	Pro	
Lys 385	Lys	Leu	Arg	Val	Lys 390	Asn	Lys	His	Val	Glu 395	Phe	Phe	Arg	Asn	Leu 400	
Tyr	Leu	Thr	Phe	Leu 405	Glu	Tyr	Asp	Gly	Asn 410	Leu	Ile	Arg	Arg	Glu 415	Leu	
Phe	Gly	Cys	Pro 420	Ser	Glu	Ala	Asp	Val 425	Asn	Ser	Glu	Asn	Leu 430	Gln	Lys	
Gln	Leu	Ser 435	Glu	Leu	Asp	Glu	Asp 440	Asp	Leu	Cys	Tyr	Glu 445	Phe	Arg	Arg	
Glu 450	Arg	Phe	Thr	Val	His 455	Arg	Thr	His	Leu	Tyr	Phe 460	Leu	His	Tyr	Glu	
Tyr 465	Glu	Pro	Ala	Ala	Asp 470	Ser	Thr	Asp	Val	Thr	Leu 475	Val	Ala	Gln	Leu 480	
Ser	Met	Asp	Arg	Leu 485	Gln	Met	Leu	Glu	Ala 490	Ile	Cys	Lys	His	Trp 495	Glu	
Gly	Pro	Ile	Ser 500	Leu	Ala	Leu	Tyr	Leu 505	Ser	Asp	Ala	Glu	Ala 510	Gln	Gln	
Phe	Leu	Arg 515	Tyr	Ala	Gln	Gly	Ser 520	Glu	Val	Leu	Met	Ser 525	Arg	His	Asn	
Val 530	Gly	Tyr	His	Ile	Val	Tyr 535	Lys	Glu	Gly	Gln	Phe 540	Tyr	Pro	Val	Asn	
Leu	Leu	Arg	Asn	Val	Ala	Met	Lys	His	Ile	Ser	Thr	Pro	Tyr	Met	Phe	

545                      550                      555                      560  
 Leu Ser Asp Ile Asp Phe Leu Pro Met Tyr Gly Leu Tyr Glu Tyr Leu  
                                  565                                   570                                   575  
 Arg Lys Ser Val Ile Gln Leu Asp Leu Ala Asn Thr Lys Lys Ala Met  
                                  580                                   585                                   590  
 Ile Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg Leu Ser Phe Pro Lys  
                                  595                                   600                                   605  
 Ser Lys Ala Glu Leu Leu Ser Met Leu Asp Met Gly Thr Leu Phe Thr  
                                  610                                   615                                   620  
 Phe Arg Tyr His Val Trp Thr Lys Gly His Ala Pro Thr Asn Phe Ala  
 625                                   630                                   635                                   640  
 Lys Trp Arg Thr Ala Thr Thr Pro Tyr Arg Val Glu Trp Glu Ala Asp  
                                  645                                   650                                   655  
 Phe Glu Pro Tyr Val Val Val Arg Arg Asp Cys Pro Glu Tyr Asp Arg  
                                  660                                   665                                   670  
 Arg Phe Val Gly Phe Gly Trp Asn Lys Val Ala His Ile Met Glu Leu  
                                  675                                   680                                   685  
 Asp Val Gln Glu Tyr Glu Phe Ile Val Leu Pro Asn Ala Tyr Met Ile  
                                  690                                   695                                   700  
 His Met Pro His Ala Pro Ser Phe Asp Ile Thr Lys Phe Arg Ser Asn  
 705                                   710                                   715                                   720  
 Lys Gln Tyr Arg Ile Cys Leu Lys Thr Leu Lys Glu Glu Phe Gln Gln  
                                  725                                   730                                   735  
 Asp Met Ser Arg Arg Tyr Gly Phe Ala Ala Leu Lys Tyr Leu Thr Ala  
                                  740                                   745                                   750  
 Glu Asn Asn Ser  
                                  755

<210> 52  
 <211> 761  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
 Ala Thr Ser Glu Arg Met Leu Gly Ile Cys Arg Gly Arg Arg Lys Phe  
   1                                  5                                  10                                  15  
 Leu Ala Ala Ser Leu Ser Leu Leu Cys Ile Pro Ala Ile Thr Trp Ile  
                                   20                                  25                                  30  
 Tyr Leu Phe Ser Gly Ser Phe Glu Asp Gly Lys Pro Val Ser Leu Ser  
                                   35                                  40                                  45

Pro Leu Glu Ser Gln Ala His Ser Pro Arg Tyr Thr Ala Ser Ser Gln  
 50 55 60  
 Arg Glu Arg Glu Ser Leu Glu Val Arg Met Arg Glu Val Glu Glu Glu  
 65 70 75 80  
 Asn Arg Ala Leu Arg Arg Gln Leu Ser Leu Ala Gln Gly Arg Ala Pro  
 85 90 95  
 Ser His Arg Arg Gly Asn His Ser Lys Thr Tyr Ser Met Glu Glu Gly  
 100 105 110  
 Thr Gly Asp Ser Glu Asn Leu Arg Ala Gly Ile Val Ala Gly Asn Ser  
 115 120 125  
 Ser Glu Cys Gly Gln Gln Pro Val Val Glu Lys Cys Glu Thr Ile His  
 130 135 140  
 Val Ala Ile Val Cys Ala Gly Tyr Asn Ala Ser Arg Asp Val Val Thr  
 145 150 155 160  
 Leu Val Lys Ser Val Leu Phe His Arg Arg Asn Pro Leu His Phe His  
 165 170 175  
 Leu Ile Ala Asp Ser Ile Ala Glu Gln Ile Leu Ala Thr Leu Phe Gln  
 180 185 190  
 Thr Trp Met Val Pro Ala Val Arg Val Asp Phe Tyr Asn Ala Asp Glu  
 195 200 205  
 Leu Lys Ser Glu Val Ser Trp Ile Pro Asn Lys His Tyr Ser Gly Ile  
 210 215 220  
 Tyr Gly Leu Met Lys Leu Val Leu Thr Lys Thr Leu Pro Ala Asn Leu  
 225 230 235 240  
 Glu Arg Val Ile Val Leu Asp Thr Asp Ile Thr Phe Ala Thr Asp Ile  
 245 250 255  
 Ala Glu Leu Trp Ala Val Phe His Lys Phe Lys Gly Gln Gln Val Leu  
 260 265 270  
 Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly Asn Leu Trp Lys  
 275 280 285  
 Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Tyr Asn Thr Gly Val  
 290 295 300  
 Ile Leu Leu Leu Leu Asp Lys Leu Arg Lys Met Lys Trp Glu Gln Met  
 305 310 315 320  
 Trp Arg Leu Thr Ala Glu Arg Glu Leu Met Gly Met Leu Ser Thr Ser  
 325 330 335  
 Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys Gln Asn Pro Phe  
 340 345 350



Leu Val Tyr Gln Leu Pro Cys Phe Trp Asn Val Gln Leu Ser Asp His  
 355 360 365  
 Thr Arg Ser Glu Gln Cys Tyr Arg Asp Val Ser Asp Leu Lys Val Ile  
 370 375 380  
 His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn Lys His Val Glu  
 385 390 395 400  
 Phe Phe Arg Asn Leu Tyr Leu Thr Phe Leu Glu Tyr Asp Gly Asn Leu  
 405 410 415  
 Ile Arg Arg Glu Leu Phe Gly Cys Pro Ser Glu Ala Asp Val Asn Ser  
 420 425 430  
 Glu Asn Leu Gln Lys Gln Leu Ser Glu Leu Asp Glu Asp Asp Leu Cys  
 435 440 445  
 Tyr Glu Phe Arg Arg Glu Arg Phe Thr Val His Arg Thr His Leu Tyr  
 450 455 460  
 Phe Leu His Tyr Glu Tyr Glu Pro Ala Ala Asp Ser Thr Asp Val Thr  
 465 470 475 480  
 Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu Glu Ala Ile  
 485 490 495  
 Cys Lys His Trp Glu Gly Pro Ile Ser Leu Ala Leu Tyr Leu Ser Asp  
 500 505 510  
 Ala Glu Ala Gln Gln Phe Leu Arg Tyr Ala Gln Gly Ser Glu Val Leu  
 515 520 525  
 Met Ser Arg His Asn Val Gly Tyr His Ile Val Tyr Lys Glu Gly Gln  
 530 535 540  
 Phe Tyr Pro Val Asn Leu Leu Arg Asn Val Ala Met Lys His Ile Ser  
 545 550 555 560  
 Thr Pro Tyr Met Phe Leu Ser Asp Ile Asp Phe Leu Pro Met Tyr Gly  
 565 570 575  
 Leu Val Glu Tyr Leu Arg Lys Ser Val Ile Gln Leu Asp Leu Ala Asn  
 580 585 590  
 Thr Lys Lys Ala Met Ile Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg  
 595 600 605  
 Leu Ser Phe Pro Lys Ser Lys Ala Glu Leu Leu Ser Met Leu Asp Met  
 610 615 620  
 Gly Thr Leu Phe Thr Phe Arg Tyr His Val Trp Thr Lys Gly His Ala  
 625 630 635 640  
 Pro Thr Asn Phe Ala Lys Trp Arg Thr Ala Thr Thr Pro Tyr Arg Val  
 645 650 655

Glu Trp Glu Ala Asp Phe Glu Pro Tyr Val Val Val Arg Arg Asp Cys  
 660 665 670  
 Pro Glu Tyr Asp Arg Arg Phe Val Gly Phe Gly Trp Asn Lys Val Ala  
 675 680 685  
 His Ile Met Glu Leu Asp Val Gln Glu Tyr Glu Phe Ile Val Leu Pro  
 690 695 700  
 Asn Ala Tyr Met Ile His Met Pro His Ala Pro Ser Phe Asp Ile Thr  
 705 710 715 720  
 Lys Phe Arg Ser Asn Lys Gln Tyr Arg Ile Cys Leu Lys Thr Leu Lys  
 725 730 735  
 Glu Glu Phe Gln Gln Asp Met Ser Arg Arg Tyr Gly Phe Ala Ala Leu  
 740 745 750  
 Lys Tyr Leu Thr Ala Glu Asn Asn Ser  
 755 760

<210> 53  
 <211> 756  
 <212> PRT  
 <213> Mus musculus

<400> 53  
 Met Leu Gly Ile Cys Arg Gly Arg Arg Lys Phe Leu Ala Ala Ser Leu  
 1 5 10 15  
 Thr Leu Leu Cys Ile Pro Ala Ile Thr Trp Ile Tyr Leu Phe Ala Gly  
 20 25 30  
 Ser Phe Glu Asp Gly Lys Pro Val Ser Leu Ser Pro Leu Glu Ser Gln  
 35 40 45  
 Ala His Ser Pro Arg Tyr Thr Ala Ser Ser Gln Arg Glu Arg Glu Ser  
 50 55 60  
 Leu Glu Val Arg Val Arg Glu Val Glu Glu Glu Asn Arg Ala Leu Arg  
 65 70 75 80  
 Arg Gln Leu Ser Leu Ala Gln Gly Gln Ser Pro Ala His His Arg Gly  
 85 90 95  
 Asn His Ser Lys Thr Tyr Ser Met Glu Glu Gly Thr Gly Asp Ser Glu  
 100 105 110  
 Asn Leu Arg Ala Gly Ile Val Ala Gly Asn Ser Ser Glu Cys Gly Gln  
 115 120 125  
 Gln Pro Ala Val Glu Lys Cys Glu Thr Ile His Val Ala Ile Val Cys  
 130 135 140  
 Ala Gly Tyr Asn Ala Ser Arg Asp Val Val Thr Leu Val Lys Ser Val  
 145 150 155 160

Leu Phe His Arg Arg Asn Pro Leu His Phe His Leu Ile Ala Asp Ser  
 165 170 175  
 Ile Ala Glu Gln Ile Leu Ala Thr Leu Phe Gln Thr Trp Met Val Pro  
 180 185 190  
 Ala Val Arg Val Asp Phe Tyr Asn Ala Asp Glu Leu Lys Ser Glu Val  
 195 200 205  
 Ser Trp Ile Pro Asn Lys His Tyr Ser Gly Ile Tyr Gly Leu Met Lys  
 210 215 220  
 Leu Val Leu Thr Lys Thr Leu Pro Ala Asn Leu Glu Arg Val Ile Val  
 225 230 235 240  
 Leu Asp Thr Asp Ile Thr Phe Ala Thr Asp Ile Ala Glu Leu Trp Ala  
 245 250 255  
 Val Phe His Lys Phe Lys Gly Gln Gln Val Leu Gly Leu Val Glu Asn  
 260 265 270  
 Gln Ser Asp Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp  
 275 280 285  
 Pro Ala Leu Gly Arg Gly Tyr Asn Thr Gly Val Ile Leu Leu Leu Leu  
 290 295 300  
 Asp Lys Leu Arg Lys Met Lys Trp Glu Gln Met Trp Arg Leu Thr Ala  
 305 310 315 320  
 Glu Arg Glu Leu Met Gly Met Leu Ser Thr Ser Leu Ala Asp Gln Asp  
 325 330 335  
 Ile Phe Asn Ala Val Ile Lys Gln Asn Pro Phe Leu Val Tyr Gln Leu  
 340 345 350  
 Pro Cys Phe Trp Asn Val Gln Leu Ser Asp His Thr Arg Ser Glu Gln  
 355 360 365  
 Cys Tyr Arg Asp Val Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro  
 370 375 380  
 Lys Lys Leu Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Leu  
 385 390 395 400  
 Tyr Leu Thr Phe Leu Glu Tyr Asp Gly Asn Leu Ile Arg Arg Glu Leu  
 405 410 415  
 Phe Gly Cys Pro Ser Glu Thr Asp Val Asn Asn Glu Asn Leu Gln Lys  
 420 425 430  
 Gln Leu Ser Glu Leu Asp Glu Asp Asp Leu Cys Tyr Glu Phe Arg Arg  
 435 440 445  
 Glu Arg Phe Thr Val His Arg Thr His Leu Tyr Phe Leu His Tyr Glu  
 450 455 460

Phe Glu Pro Ser Ala Asp Asn Thr Asp Val Thr Leu Val Ala Gln Leu  
 465 470 475 480  
 Ser Met Asp Arg Leu Gln Met Leu Glu Ala Ile Cys Lys His Trp Glu  
 485 490 495  
 Gly Pro Ile Ser Leu Ala Leu Tyr Leu Ser Asp Ala Glu Ala Gln Gln  
 500 505 510  
 Phe Leu Arg Tyr Ala Gln Gly Ser Glu Val Leu Met Ser Arg Gln Asn  
 515 520 525  
 Val Gly Tyr His Ile Val Tyr Lys Glu Gly Gln Phe Tyr Pro Val Asn  
 530 535 540  
 Leu Leu Arg Asn Val Ala Met Lys His Ile Ser Thr Pro Tyr Met Phe  
 545 550 555 560  
 Leu Ser Asp Ile Asp Phe Leu Pro Met Tyr Gly Leu Val Glu Tyr Leu  
 565 570 575  
 Arg Lys Ser Val Ile Gln Leu Asp Leu Ala Asn Thr Lys Lys Ala Met  
 580 585 590  
 Ile Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg Leu Ser Phe Pro Lys  
 595 600 605  
 Ser Lys Ala Glu Leu Leu Ser Met Leu Asp Met Gly Thr Leu Phe Thr  
 610 615 620  
 Phe Arg Tyr His Val Trp Thr Lys Gly His Ala Pro Thr Asn Phe Ala  
 625 630 635 640  
 Lys Trp Arg Thr Ala Thr Thr Pro Tyr Gln Val Glu Trp Glu Ala Asp  
 645 650 655  
 Phe Glu Pro Tyr Val Val Val Arg Arg Asp Cys Pro Glu Tyr Asp Arg  
 660 665 670  
 Arg Phe Val Gly Phe Gly Trp Asn Lys Val Ala His Ile Met Glu Leu  
 675 680 685  
 Asp Ala Gln Glu Tyr Glu Phe Thr Val Leu Pro Asn Ala Tyr Met Ile  
 690 695 700  
 His Met Pro His Ala Pro Ser Phe Asp Ile Thr Lys Phe Arg Ser Asn  
 705 710 715 720  
 Lys Gln Tyr Arg Ile Cys Leu Lys Thr Leu Lys Glu Glu Phe Gln Gln  
 725 730 735  
 Asp Met Ser Arg Arg Tyr Gly Phe Ala Ala Leu Lys Tyr Leu Thr Ala  
 740 745 750  
 Glu Asn Asn Ser  
 755

<210> 54  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 54  
tggagaacca gagtgactgg ta 22

<210> 55  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 55  
aacctctgga agaaccacag gccct 25

<210> 56  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 56  
agcaggatca cacctgtgtt aa 22

<210> 57  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 57  
ggatccgagg actctgggtg gtgtgggcct gtgtgc 36

<210> 58  
<211> 35  
<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 58

ctcgaggaca tcttgcaaac cctgtgctgt gatgg

35

<210> 59

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 59

agatctcggg aggctgcgga gagccgccgc cctcgacg

38

<210> 60

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 60

ctcgaggcct cgggcagggc tctggggctg ctgcagg

37

<210> 61

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 61

cacttggtga ctgacgccgt

20

<210> 62

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 62  
acggcgctcag tcaccaagtg 20

<210> 63  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 63  
cggcaggctg gctgggagc 19

Q1  
<210> 64  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 64  
gctcccagcc agcctgccg 19

<210> 65  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 65  
gctgcggaga gagctctt 18

<210> 66  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:chemically  
synthesized

<400> 66  
aagagctctc tccgcagc 18

<210> 67  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 67

cgaggcctca ccagtgttg c

21

<210> 68

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 68

gcaagcactg gtgaggcctc g

21

<210> 69

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 69

gcactctcta caccttcag

19

<210> 70

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 70

ctgaaggtgt agagagtc

19

<210> 71

<211> 31

<212> DNA

<213> Artificial Sequence



<220>

<223> Description of Artificial Sequence:chemically synthesized

<400> 71

agatctaacc gctccgactg cggccccgcag c

31

<210> 72

<211> 1926

<212> DNA

<213> Homo sapiens

<400> 72

aaccgctccg actgcggccc gcagccgccc cgcgcgccc agtgcgagct cttgcatgtg 60  
gccatcgtgt gtgcggggca taactccagc cgagacgtca tcacctggt gaagtccatg 120  
ctcttctaca ggaaaaatcc actgcacctc cacttggtga ctgacgccgt ggccagaaac 180  
atcctggaga cgctcttcca cacatggatg gtgcctgctg tccgtgtcag cttttatcat 240  
accgaccagc tcaagcccca ggtctcctgg atccccaaca agcactactc cggcctctat 300  
gggctaataga agctggtgct gccagtgcc ttgcctgctg agctggcccc cgtcattgtc 360  
ctggacacgg atgtcacctt cgcctctgac atctcggagc tctgggccct ctgtgctcac 420  
ttttctgaca cgcaggcgat cggctctgtg gagaaccaga gtgactggta cctgggcaac 480  
ctctggaaga accacaggcc ctggcctgcc ttgggcccgg gatttaacac aggtgtgatc 540  
ctgctgcggc tggaccggct ccggcaggct ggctgggagc agatgtggag gctgacagcc 600  
aggcgggagc tccttagcct gcctgccacc tcaactggctg accaggacat cttcaacgct 660  
gtgatcaagg agcaccgggg gctagtgcag cgtctgcctt gtgtctggaa tgtgcagctg 720  
tcagatcaca cactggccga gcgctgctac tctgaggcgt ctgacctcaa ggtgatccac 780  
tggaactcac caaagaagct tcgggtgaag aacaagcatg tggaattctt ccgcaatttc 840  
tacctgacct tcctggagta cgatgggaac ctgctgcgga gagagctctt tgtgtgcccc 900  
agccagcccc cacctggtgc tgagcagttg cagcaggccc tggcacaact ggacgaggaa 960  
gacccctgct ttgagttccg gcagcagcag ctcaactgtgc accgtgtgca tgtcactttc 1020  
ctgccccatg aaccgccacc cccccggcct cacgatgtca cccttgtggc ccagctgtcc 1080  
atggaccggc tgcagatggt ggaagccctg tgcaggcact ggccctggccc catgagcctg 1140  
gccttgtagc tgacagacgc agaagctcag cagttcctgc atttcgtcga ggcctcacca 1200  
gtgcttgctg cccggcagga cgtggcctac catgtggtgt accgtgaggg gcccctatac 1260  
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agtgcatttg acttctctgc tgctatttct ctctacgact acctcagggc ctccattgag 1380  
cagctggggc tgggcagccg gcgcaaggca gcaactggtg tgccggcatt tgagaccctg 1440  
cgctaccgct tcagcttccc ccattccaag gtggagctgt tggccttctg ggatgcgggc 1500  
actctctaca ccttcaggta ccacgagtgg ccccagggcc acgcacccac agactatgcc 1560  
cgctggcggg aggtctaggc cccgtaccgt gtgcaatggg cggccaacta tgaaccctac 1620  
gtggtggtgc cacgagactg tccccgctat gatcctcgct ttgtgggctt cggctggaac 1680  
aaagtggccc acattgtgga gctggatgcc caggaatatg agctcctggt gctgcccag 1740  
gccttcacca tccatctgcc ccacgctcca agcctggaca tctcccgctt ccgctccagc 1800  
cccacctatc gtgactgcct ccaggccctc aaggacgaat tccaccagga cttgtcccgc 1860  
caccatgggg ctgctgccct caaatacctc ccagccctgc agcagcccca gagccctgcc 1920  
cgaggc 1926

<210> 73

<211> 642

<212> PRT

<213> Homo sapiens

<400> 73

Asn Arg Ser Asp Cys Gly Pro Gln Pro Pro Pro Pro Pro Lys Cys Glu  
1 5 10 15

Leu Leu His Val Ala Ile Val Cys Ala Gly His Asn Ser Ser Arg Asp  
 20 25 30  
 Val Ile Thr Leu Val Lys Ser Met Leu Phe Tyr Arg Lys Asn Pro Leu  
 35 40 45  
 His Leu His Leu Val Thr Asp Ala Val Ala Arg Asn Ile Leu Glu Thr  
 50 55 60  
 Leu Phe His Thr Trp Met Val Pro Ala Val Arg Val Ser Phe Tyr His  
 65 70 75 80  
 Thr Asp Gln Leu Lys Pro Gln Val Ser Trp Ile Pro Asn Lys His Tyr  
 85 90 95  
 Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu Pro Ser Ala Leu Pro  
 100 105 110  
 Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr Asp Val Thr Phe Ala  
 115 120 125  
 Ser Asp Ile Ser Glu Leu Trp Ala Leu Cys Ala His Phe Ser Asp Thr  
 130 135 140  
 Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp Trp Tyr Leu Gly Asn  
 145 150 155 160  
 Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu Gly Arg Gly Phe Asn  
 165 170 175  
 Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu Arg Gln Ala Gly Trp  
 180 185 190  
 Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu Leu Leu Ser Leu Pro  
 195 200 205  
 Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn Ala Val Ile Lys Glu  
 210 215 220  
 His Pro Gly Leu Val Gln Arg Leu Pro Cys Val Trp Asn Val Gln Leu  
 225 230 235 240  
 Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser Glu Ala Ser Asp Leu  
 245 250 255  
 Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu Arg Val Lys Asn Lys  
 260 265 270  
 His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr Phe Leu Glu Tyr Asp  
 275 280 285  
 Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys Pro Ser Gln Pro Pro  
 290 295 300  
 Pro Gly Ala Glu Gln Leu Gln Gln Ala Leu Ala Gln Leu Asp Glu Glu  
 305 310 315 320

Asp Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu Thr Val His Arg Val  
 325 330 335  
 His Val Thr Phe Leu Pro His Glu Pro Pro Pro Pro Arg Pro His Asp  
 340 345 350  
 Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg Leu Gln Met Leu Glu  
 355 360 365  
 Ala Leu Cys Arg His Trp Pro Gly Pro Met Ser Leu Ala Leu Tyr Leu  
 370 375 380  
 Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe Val Glu Ala Ser Pro  
 385 390 395 400  
 Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His Val Val Tyr Arg Glu  
 405 410 415  
 Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn Val Ala Leu Ala Gln  
 420 425 430  
 Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile Asp Phe Leu Pro Ala  
 435 440 445  
 Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile Glu Gln Leu Gly Leu  
 450 455 460  
 Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro Ala Phe Glu Thr Leu  
 465 470 475 480  
 Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val Glu Leu Leu Ala Leu  
 485 490 495  
 Leu Asp Ala Gly Thr Leu Tyr Thr Phe Arg Tyr His Glu Trp Pro Arg  
 500 505 510  
 Gly His Ala Pro Thr Asp Tyr Ala Arg Trp Arg Glu Ala Gln Ala Pro  
 515 520 525  
 Tyr Arg Val Gln Trp Ala Ala Asn Tyr Glu Pro Tyr Val Val Val Pro  
 530 535 540  
 Arg Asp Cys Pro Arg Tyr Asp Pro Arg Phe Val Gly Phe Gly Trp Asn  
 545 550 555 560  
 Lys Val Ala His Ile Val Glu Leu Asp Ala Gln Glu Tyr Glu Leu Leu  
 565 570 575  
 Val Leu Pro Glu Ala Phe Thr Ile His Leu Pro His Ala Pro Ser Leu  
 580 585 590  
 Asp Ile Ser Arg Phe Arg Ser Ser Pro Thr Tyr Arg Asp Cys Leu Gln  
 595 600 605  
 Ala Leu Lys Asp Glu Phe His Gln Asp Leu Ser Arg His His Gly Ala  
 610 615 620

Ala Ala Leu Lys Tyr Leu Pro Ala Leu Gln Gln Pro Gln Ser Pro Ala  
625 630 635 640

Arg Gly

<210> 74  
<211> 695  
<212> PRT  
<213> Homo sapiens

<400> 74  
Met Leu Pro Arg Gly Arg Pro Arg Ala Leu Gly Ala Ala Ala Leu Leu  
1 5 10 15

Leu Leu Leu Leu Leu Leu Gly Phe Leu Leu Phe Gly Gly Asp Leu Gly  
20 25 30

Arg Glu Ala Ala Glu Ser Arg Arg Pro Arg Arg Asn Pro Gly Gly Pro  
35 40 45

Ala Pro Gly Thr Thr Thr Ala Pro Thr Ala Ala Arg Ser Arg Arg Arg  
50 55 60

Pro Pro Lys Cys Glu Leu Leu His Val Ala Ile Val Cys Ala Gly His  
65 70 75 80

Asn Ser Ser Arg Asp Val Ile Ile Leu Val Lys Ser Met Leu Phe Tyr  
85 90 95

Arg Lys Asn Pro Leu His Leu His Leu Val Thr Asp Ala Val Ala Arg  
100 105 110

Asn Ile Leu Glu Thr Leu Phe His Thr Trp Met Val Pro Ala Val Arg  
115 120 125

Val Ser Phe Tyr His Ala Asp Gln Leu Lys Pro Gln Val Ser Trp Ile  
130 135 140

Pro Asn Lys His Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu Val Leu  
145 150 155 160

Pro Ser Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val Leu Asp Thr  
165 170 175

Asp Val Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu Phe Ala  
180 185 190

His Phe Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn Gln Ser Asp  
195 200 205

Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro Ala Leu  
210 215 220

Gly Arg Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu Asp Arg Leu

225                      230                      235                      240  
 Arg Gln Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala Arg Arg Glu  
                                  245                      250                      255  
 Leu Leu Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile Phe Asn  
                                  260                      265                      270  
 Ala Val Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu Pro Cys Val  
                                  275                      280                      285  
 Trp Asn Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg Cys Tyr Ser  
                                  290                      295                      300  
 Glu Ala Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys Lys Leu  
 305                                   310                      315                      320  
 Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe Tyr Leu Thr  
                                  325                      330                      335  
 Phe Leu Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe Val Cys  
                                  340                      345                      350  
 Pro Ser Gln Pro Pro Pro Gly Ala Glu Gln Leu Gln Gln Ala Leu Ala  
                                  355                      360                      365  
 Gln Leu Asp Glu Glu Asp Pro Cys Phe Glu Phe Arg Gln Gln Gln Leu  
                                  370                      375                      380  
 Thr Val His Arg Val His Val Thr Phe Leu Pro His Glu Pro Pro Pro  
 385                                   390                      395                      400  
 Pro Arg Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met Asp Arg  
                                  405                      410                      415  
 Leu Gln Met Leu Glu Ala Leu Cys Arg His Trp Pro Gly Pro Met Ser  
                                  420                      425                      430  
 Leu Ala Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu His Phe  
                                  435                      440                      445  
 Val Glu Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala Tyr His  
                                  450                      455                      460  
 Val Val Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu Arg Asn  
 465                                   470                      475                      480  
 Val Ala Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser Asp Ile  
                                  485                      490                      495  
 Asp Phe Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala Ser Ile  
                                  500                      505                      510  
 Glu Gln Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val Val Pro  
                                  515                      520                      525  
 Ala Phe Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser Lys Val

530				535				540							
Glu 545	Leu	Leu	Ala	Leu	Leu 550	Asp	Ala	Gly	Thr	Leu 555	Tyr	Thr	Phe	Arg	Tyr 560
His	Glu	Trp	Pro	Arg 565	Gly	His	Ala	Pro	Thr 570	Asp	Tyr	Ala	Arg	Trp 575	Arg
Glu	Ala	Gln	Ala 580	Pro	Tyr	Arg	Val	Gln 585	Trp	Ala	Ala	Asn	Tyr 590	Glu	Pro
Tyr	Val	Val 595	Val	Pro	Arg	Asp	Cys 600	Pro	Arg	Tyr	Asp	Pro 605	Arg	Phe	Val
Gly 610	Phe	Gly	Trp	Asn	Lys	Val 615	Ala	His	Ile	Val	Glu 620	Leu	Asp	Ala	Gln
Glu 625	Tyr	Glu	Leu	Leu	Val 630	Leu	Pro	Glu	Ala	Phe 635	Thr	Ile	His	Leu	Pro 640
His	Ala	Pro	Ser	Leu 645	Asp	Ile	Ser	Arg	Phe 650	Arg	Ser	Ser	Pro	Thr 655	Tyr
Arg	Asp	Cys	Leu 660	Gln	Ala	Leu	Lys	Asp 665	Glu	Phe	His	Gln	Asp 670	Leu	Ser
Arg	His	His 675	Gly	Ala	Ala	Ala	Leu 680	Lys	Tyr	Leu	Pro	Ala 685	Leu	Gln	Gln
Pro 690	Gln	Ser	Pro	Ala	Arg	Gly 695									

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<210> 75
<211> 617
<212> PRT
<213> Homo sapiens
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<220>
<221> VARIANT
<222> (50)
<223> where Xaa is any amino acid as defined in the
specification
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<400> 75
Met Leu Leu Leu Leu Gly Pro Leu Arg Leu Pro Leu Cys Pro Pro Lys
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Arg Lys Asn Pro Leu His Leu His Leu Val Thr Asp Ala Val Ala Arg
      20             25             30

Asn Ile Leu Glu Thr Leu Phe His Thr Trp Met Val Pro Ala Ile Asp
      35             40             45

Pro Xaa Val Ser Phe Tyr His Ala Asp Gln Leu Lys Pro Gln Val Ser
  50             55             60

```

Trp Ile Pro Asn Lys His Tyr Ser Gly Leu Tyr Gly Leu Met Lys Leu  
 65 70 75 80  
 Val Leu Pro Asn Ala Leu Pro Ala Glu Leu Ala Arg Val Ile Val Leu  
 85 90 95  
 Asp Thr Asp Val Thr Phe Ala Ser Asp Ile Ser Glu Leu Trp Ala Leu  
 100 105 110  
 Cys Ala His Phe Ser Asp Thr Gln Ala Ile Gly Leu Val Glu Asn Gln  
 115 120 125  
 Ser Asp Trp Tyr Leu Gly Asn Leu Trp Lys Asn His Arg Pro Trp Pro  
 130 135 140  
 Ala Leu Gly Arg Gly Phe Asn Thr Gly Val Ile Leu Leu Arg Leu Asp  
 145 150 155 160  
 Arg Leu Arg Gln Ala Gly Trp Glu Gln Met Trp Arg Leu Thr Ala Arg  
 165 170 175  
 Arg Glu Leu Leu Ser Leu Pro Ala Thr Ser Leu Ala Asp Gln Asp Ile  
 180 185 190  
 Phe Asn Ala Val Ile Lys Glu His Pro Gly Leu Val Gln Arg Leu Pro  
 195 200 205  
 Cys Val Trp Asn Val Gln Leu Ser Asp His Thr Leu Ala Glu Arg Cys  
 210 215 220  
 Tyr Ser Glu Ala Ser Asp Leu Lys Val Ile His Trp Asn Ser Pro Lys  
 225 230 235 240  
 Lys Leu Arg Val Lys Asn Lys His Val Glu Phe Phe Arg Asn Phe Tyr  
 245 250 255  
 Leu Thr Phe Leu Glu Tyr Asp Gly Asn Leu Leu Arg Arg Glu Leu Phe  
 260 265 270  
 Val Cys Pro Ser Gln Pro Pro Pro Gly Ala Glu Gln Leu Gln Gln Ala  
 275 280 285  
 Leu Ala Gln Leu Asp Glu Glu Asp Pro Cys Phe Glu Phe Arg Gln Gln  
 290 295 300  
 Gln Leu Thr Val His Arg Val His Val Thr Phe Leu Pro His Glu Pro  
 305 310 315 320  
 Pro Pro Pro Arg Pro His Asp Val Thr Leu Val Ala Gln Leu Ser Met  
 325 330 335  
 Asp Arg Leu Gln Met Leu Glu Ala Leu Cys Arg His Trp Pro Gly Pro  
 340 345 350  
 Met Ser Leu Ala Leu Tyr Leu Thr Asp Ala Glu Ala Gln Gln Phe Leu  
 355 360 365

His Phe Val Glu Ala Ser Pro Val Leu Ala Ala Arg Gln Asp Val Ala  
370 375 380

Tyr His Val Val Tyr Arg Glu Gly Pro Leu Tyr Pro Val Asn Gln Leu  
385 390 395 400

Arg Asn Val Ala Leu Ala Gln Ala Leu Thr Pro Tyr Val Phe Leu Ser  
405 410 415

Asp Ile Asp Phe Leu Pro Ala Tyr Ser Leu Tyr Asp Tyr Leu Arg Ala  
420 425 430

Ser Ile Glu Gln Leu Gly Leu Gly Ser Arg Arg Lys Ala Ala Leu Val  
435 440 445

Val Pro Ala Phe Glu Thr Leu Arg Tyr Arg Phe Ser Phe Pro His Ser  
450 455 460

Lys Val Glu Leu Leu Ala Leu Leu Asp Ala Gly Thr Leu Tyr Thr Phe  
465 470 475 480

Arg Tyr His Glu Trp Pro Arg Gly His Ala Pro Thr Asp Tyr Ala Arg  
485 490 495

Trp Arg Glu Ala Gln Ala Pro Tyr Arg Val Gln Trp Ala Ala Asn Tyr  
500 505 510

Glu Pro Tyr Val Val Val Pro Arg Asp Cys Pro Arg Tyr Asp Pro Arg  
515 520 525

Phe Val Gly Phe Gly Trp Asn Lys Val Ala His Ile Val Glu Leu Asp  
530 535 540

Ala Gln Glu Tyr Glu Leu Leu Val Leu Pro Glu Ala Phe Thr Ile His  
545 550 555 560

Leu Pro His Ala Pro Ser Leu Asp Ile Ser Arg Phe Arg Ser Ser Pro  
565 570 575

Thr Tyr Arg Asp Cys Leu Gln Ala Leu Lys Asp Glu Phe His Gln Asp  
580 585 590

Leu Ser Arg His His Gly Ala Ala Ala Leu Lys Tyr Leu Pro Ala Leu  
595 600 605

Gln Gln Pro Gln Ser Pro Ala Arg Gly  
610 615

a1  
sub C23  
cont.